ACC.12
61st Annual Scientific Session & Expo
ACC-i2 with TCT
innovation in intervention

E171
JACC March 27, 2012
Volume 59, Issue 13

ACC-i2 with TCT

THE DIAGNOSTIC YIELD OF CORONARY ANGIOGRAPHY REMAINS LOW, DESPITE PRIOR MYOCARDIAL PERFUSION IMAGING TESTING, IN PATIENTS WITH SUSPECTED OBSTRUCTIVE CORONARY ARTERY DISEASE: RESULTS OF THE PREDICT (PERSONALIZED RISK EVALUATION AND DIAGNOSIS IN THE CORONARY TREE) TRIAL

i2 Poster Contributions
McCormick Place South, Hall A
Saturday, March 24, 2012, 9:30 a.m.-Noon

Session Title: Coronary Angiography
Abstract Category: 2. Imaging in the Cath Lab; Angiography & QCA
Presentation Number: 2529-545

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Background: Non-invasive and invasive diagnostic studies for evaluating coronary artery disease (CAD) are on the rise. We examined the diagnostic yield of coronary angiography in patients with suspected obstructive coronary artery disease (CAD+) who had already undergone myocardial perfusion imaging (MPI) testing in a subset of the PREDICT trial, which validated a gene expression score for the detection of CAD+.

Methods: The PREDICT trial was a prospective, multicenter study that enrolled patients referred for coronary angiography for the discovery, development, and validation of a gene expression score (GES) for the detection of obstructive CAD. Patients were referred for coronary angiography according to local practice, based on symptoms suggestive of CAD, high-risk clinical characteristics, and/or positive noninvasive stress test. In this subset, post-hoc analysis, evaluable non-diabetic patients were required to have both a MPI and coronary angiography. Local cardiologists interpreted CAD+ as left main disease ≥ 50% and/or epicardial coronary artery with ≥ 70% lumen obstruction.

Results: We evaluated 1418 patients who underwent MPI followed by clinical angiography. The patients had an average age of 60 and 48% were female. Approximately, 78.1% (1107/1418) of the patients had possible (12.7%) or definite (65.3%) ischemia on MPI (MPI+). The overall yield for CAD+ in the MPI+ subgroup based on site-read angiograms, was 27.6% (37.2% for men and 16.2% for women, p value <0.0001).

Conclusion: In this observational study of patients referred for diagnostic angiography after MPI testing for suspected CAD, 72% of patients did not have obstructive CAD on invasive testing. This rate is higher than previously reported in the ACC Cardiovascular Data Registry. The yield was significantly lower in women versus men. In over 75% of cases, a positive MPI test drove referral to cardiac catheterization. Adoption of more discriminating non-invasive diagnostic tests with high negative predictive value is needed to rule-out patients and ultimately improve the overall diagnostic yield on coronary angiography.